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PREEMERGENCE YELLOW NUTSEDGE CONTROL WITH VEXIS

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INTRODUCTION

The objective of this experiment was to evaluate pyrimisulfan for pre-emergence yellow nutsedge (*Cyperus esculentus*) control.

MATERIALS AND METHODS

This experiment was conducted at the Rutgers Adelphia Research and Extension Farm in a fallow field with sandy loam soil and a history of yellow nutsedge. Glyphosate was applied on 21 March 2020 to control existing winter annual weeds. The site was mowed twice monthly at 5". Yellow nutsedge cover was >80% in the non-treated at the conclusion of the experiment. No fertilizers or plant protectants were applied to the experiment.

Treatments (Table 1) were arranged in a randomized block design and replicated four times. Plots measured 4' by 7' and included a 12" wide non-treated buffer strip between each plot providing a 3' by 7' treated area. Sprayable treatments were applied using a CO_2- powered sprayer calibrated to apply 44 GPA through a single AI9504EVS nozzle at 40 PSI. Granular treatments were applied with a shaker jar. Pre-emergence timed treatments were applied on April 26 and May 22, 2020 and received irrigation or rainfall with 36 hours of application.

Yellow nutsedge control was evaluated visually on a 0 (no injury or control) to 100 (complete control) percent scale relative to the non-treated control. Data were subjected to ANOVA in ARM (v9) and Fisher's Protected LSD (P=0.05) was used to separate means.

RESULTS

All treatments provided >95% yellow nutsedge control at 4 and 7 weeks after initial treatment (WAIT; Table 2). At 12 WAIT in July, sequential applications of Vexis provided and Echelon provided more control than all other treatments. This trend continued until the conclusion of the experiment in late August when Echelon and Vexis provided 99 and 88% yellow nutsedge control, respectively.

This experiment indicates that preemergence applications of Vexis and Echelon provide yellow nutsedge control. Sequential applications provided more control than single applications from 7 WAIT until the conclusion of the experiment.

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Table 1.   Herbicide treatments applied at the Rutgers Adelphia Plant Science Research and Extension Farm in Freehold, NJ for yellow nutsedge (*Cyperus esculentus*) control. Treatments were initiated on April 26 (application code A) and sequential applications (application code B) were made on May 22, 2020.

Treatment	Product	Active Ingredient	Product rate (per acre)	Active Ingredient rate (per acre)	Application code
1	Non-treated	-	-		
2	Vexis	pyrimisulfan	12.5 fl oz	0.75 oz	A
3	EH-1663	pyrimisulfan	12.5 fl oz	0.75 oz	A
4	Vexis	pyrimisulfan	25.2 fl oz	0.75 oz	A *fb*[†] B
5	EH-1663	pyrimisulfan	25.2 fl oz	0.75 oz	A *fb*[†] B
6	Echelon	prodiamine + sulfentrazone	12 fl oz/A	0.20 + 0.125	A *fb*[†] B

[†]Abbreviations: *fb*; followed by

Table 2. Yellow nutsedge (*Cyperus esculentus*) control from herbicide treatments applied at the Rutgers Adelphia Plant Science Research and Extension Farm in Freehold, NJ. Treatments were initiated on April 26 (application code A) and sequential applications (application code B) were made on May 22, 2020. Yellow nutsedge was evaluated visually on a 0 (no control) to 100 (complete control) percent scale relative to the non-treated control.

Treatment	Product	Appliction code	Percent yellow nutsedge control											
			27 May		12-Jun.		24 June		16 July		6-Aug.		20-Aug.	
			4 WAIT[†]		7 WAIT[†]		9 WAIT[†]		12 WAIT[†]		15 WAIT[†]		17 WAIT[†]	
1	Non-treated	–	0	b[‡]	0	d	0	c	0	c	0	d	0	d
2	Vexis	A	100	a	96	c	91	b	77	b	55	c	50	c
3	EH-1663	A	100	a	97	bc	94	ab	81	b	61	c	58	c
4	Vexis	A *fb*[†] B	100	a	100	a	100	a	98	a	92	ab	88	ab
5	EH-1663	A *fb*[†] B	100	a	98	abc	95	ab	79	b	69	bc	64	bc
6	Echelon	A *fb*[†] B	100	a	99	ab	97	ab	100	a	99	a	99	a
		LSD$_{0.05}$[‡]	3		3		7		13		27		29	

[†] Abbreviations: WAIT, weeks after initial application; fb, followed by

[‡] Means followed by the same letter are not significantly different according to Fisher's Protected LSD test; P=0.05.